

to examine health and cost burden of HPV-related diseases to understand the potential impact of introducing HPV vaccine. **OBJECTIVES:** We aimed to evaluate the long-term health and cost burden associated with cervical cancer, cervical intraepithelial neoplasia (CIN) and genital warts from health-care provider perspective in Thailand. **METHODS:** We developed a state-transition Markov model to simulate the epidemiology of stages of cervical cancer, CIN and genital warts in a hypothetical cohort of 100,000 12-year-old girls. Costs included diagnosis and treatment costs of HPV related diseases. Probabilities at each chance node in the model were derived from the Thailand health-care context. **RESULTS:** The highest incidence of CIN and genital warts was observed among women aged 20–30 years. For cervical cancer, the highest incidence was observed among women aged 45–55 years. Death rate was estimated at 2%, 8%, 84%, and 94% for cervical cancer stage IA1, IA2-IIA, IIB-IVA, and IVB, respectively. The estimated mean direct cost per patient with cervical cancer stage IA1, IA2-IIA, IIB-IVA, IVB, CIN1, CIN2/3 and genital warts were US\$1277, US\$3020, US\$12,506, US\$10,019, US\$167, US\$1551, and US\$111, respectively. The overall lifetime costs were estimated at US\$26.7 million for a cohort of 100,000 women, which corresponded to approximately US\$132.0 million for the current entire cohort of 12-year-old girls in Thailand. **CONCLUSIONS:** HPV-related diseases impose significant health and cost burden in Thailand. The potential impact on HPV-related diseases of a national immunization program with HPV vaccine should be examined to inform the policy discussions around the HPV vaccination program in Thailand.

**PCN11****PREVENTION OF OXALIPLATIN HYPERSENSITIVITY REACTION AND COST SAVING**

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**OBJECTIVES:** Hypersensitivity reactions have been reported in Oxaliplatin for the treatment of advanced colorectal cancer (mCRC). The reported incidence of hypersensitivity reactions (HSRs) is approximately 12%, with 1–2% of patients developing grade 3 or 4 in severity which may postpone length of stay and incurred extra cost for the treatment of hypersensitivity reactions. **METHODS:** This is a retrospective observational study. Medical records of hospitalized patients with mCRC, who treated with FOLFOX regimen and occurred mild to severe HSRs were identified and reviewed by oncology pharmacist from January 2004 to February 2010. Direct medical cost for the treatment of HSRs and the extra days of hospitalization were calculated. We compared the difference of direct medical cost for patients whose oxaliplatin was discontinued (group A) and those oxaliplatin was continued (group B) for treating mCRC after the computer detected patients' allergy and the signal was appeared on the screen of physician-order-entry-system. Student t test was used for data analysis. **RESULTS:** A total of 442 patients with the diagnosis of mCRC and had reported moderate to severe HSRs during the treatment of FOLFOX regimen through our computerized decision supporting system (patients allergy history alert system) were included in this study. Twenty-four of 442 patients reported mild to severe hypersensitivity reactions caused by oxaliplatin. The total direct medical costs for 24 patients were NT\$864,352 dollars. The direct medical cost to manage HSRs in group A was higher than that in group B. **CONCLUSIONS:** Oxaliplatin induced severe hypersensitivity reaction is scare, but it may cause an extra direct medical costs if it is appearance. To develop a computerized alert signal is helpful and is likely to save costs.

**PCN12****COST-EFFECTIVENESS OF THE ONCOTYPE DX® ASSAY IN AUSTRALIA: AN EXPLORATORY ANALYSIS**O'Leary B<sup>1</sup>, Foteff C<sup>2</sup>, Byron K<sup>3</sup>, Chang C<sup>4</sup>, Chao C<sup>4</sup>, Ng C<sup>5</sup>, Skrzypczak S<sup>4</sup><sup>1</sup>Covance Pty Ltd, North Ryde, NSW, Australia; <sup>2</sup>Covance Pty Ltd, North Ryde, NSW,Australia; <sup>3</sup>Gribbles Pathology, Clayton, VIC, Australia; <sup>4</sup>Genomic Health, Inc., Redwood City,CA, USA; <sup>5</sup>Genomic Health, Inc., Hong Kong, HKSAR, Hong Kong

**OBJECTIVES:** Oncotype DX is a molecular diagnostic assay that measures quantitative expression of 21 genes within a breast tumor sample. The result is reported as a recurrence score (RS) that correlates with the risk of 10-year recurrence. The potential cost impact on chemotherapy treatment and an exploratory cost utility analysis were undertaken from the Australian health-care system perspective. **METHODS:** Input on the proportion of patients treated with chemotherapy and treatment regimens were obtained from an expert panel and a supplementary survey of Australian clinicians (oncologists and surgeons, n = 12). Data on the proportion of patients who would forgo chemotherapy based on knowledge of the RS and the incidence and cost of adverse events were obtained from published literature. **RESULTS:** The clinician input indicated that 33% of node negative and 84% of node positive women receive adjuvant chemotherapy on average. The most common treatments for node-negative patients were AC (anthracycline and cyclophosphamide) (77%) and FEC100 (fluorouracil, epirubicin and cyclophosphamide) (16%) and for node-positive patients FEC-D (FEC plus docetaxel) (54%), AC + paclitaxel (26%) and TAC (docetaxel plus AC) (14%). Published switch rates away from chemotherapy are 20% for node negative and 24% for node positive patients. The cost saving due to a reduction in chemotherapy was estimated to be A\$2264 per woman tested. After consideration for the cost of the assay (A\$4200) and a published utility rate of 0.5, a A\$/QALY gain was estimated at A\$9986. **CONCLUSIONS:** Knowledge of the Oncotype DX RS has a cost-offset due to the reduction in chemotherapy and is likely to be cost-effective. These benefits reflect the quality of life and survival benefits of a more targeted approach to treatment decision-making. Further analysis is warranted to include the

potential costs of relapse avoided by use of the assay and any patient indirect costs in Australia.

**PCN13****COST-BENEFIT ANALYSIS OF A 21-GENE RECURRENCE SCORE FOR EARLY STAGE BREAST CANCER IN SINGAPORE**de Lima Lopes G<sup>1</sup>, Chien R<sup>2</sup>, Hornberger J<sup>3</sup><sup>1</sup>Johns Hopkins Singapore International Medical Centre and Johns Hopkins University School of Medicine, Singapore; <sup>2</sup>Cedar Associates LLC, Menlo Park, CA, USA; <sup>3</sup>Cedar Associates LLC and Stanford University, Menlo Park, CA, USA

**BACKGROUND:** Breast cancer represents a significant burden of illness worldwide. Cost of cancer management is a key policy concern. The adoption of 21-gene breast cancer recurrence score (RS) was projected to be cost-effective. **OBJECTIVES:** To assess cost-benefit of the 21-gene RS for lymph node negative, estrogen receptor positive early-stage breast cancer (ESBC) in Singapore from a patient's perspective. **METHODS:** We adopted a validated Markov model to calculate the cost implications of RS for an early-stage breast cancer patient. The probability of individual's risk of recurrence, chemotherapy benefits and decision impact of RS were derived from existing studies. The model accounted for both direct and indirect costs associated with adjuvant chemotherapy. Direct costs included chemotherapy drugs, supportive care drugs, administration, and management of adverse events adjusted by incidence, and cost of recurrence. Indirect costs included productivity loss during chemotherapy and distant recurrence. Chemotherapy regimen distribution and costs were obtained from medical oncologists at a private and a public cancer centers in Singapore. **RESULTS:** The pretest probabilities of risk of recurrence per woman as low, intermediate or high were 49.8%, 30.3%, and 19.9%, respectively. The average direct potential savings per patient tested in Singapore Dollars (SGD) for chemotherapy drug, supportive care, management of AE and administration were \$2942, \$1077, \$169, and \$1340, respectively. Per patient saving from productivity loss during treatment was \$468. At manufacturer price, the model projects immediate realized savings of \$430 with the adoption of the RS. The model also projects \$1331 direct savings, and \$2418 indirect savings from preventing distant recurrence. Multiple sensitivity analyses demonstrate the robustness of the savings with adoption of RS under a variety of conditions. **CONCLUSIONS:** For women with ESBC in Singapore, the RS is a cost-saving treatment decision tool.

**PCN14****ADDITIONAL HEALTH AND ECONOMIC IMPACT OF THE BIVALENT VERSUS THE QUADRIVALENT HPV VACCINE IN TAIWAN: RESULTS OF A PREVALENCE-BASED MODEL**Ho T<sup>1</sup>, Van Enckevort PJ<sup>2</sup>, Demartean N<sup>3</sup><sup>1</sup>GlaxoSmithKline, Taipei, Taiwan; <sup>2</sup>GlaxoSmithKline Biologicals, Singapore; <sup>3</sup>GlaxoSmithKline

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**OBJECTIVES:** Two human papillomavirus (HPV) vaccines currently exist: a bivalent targeting oncogenic high-risk HPV-16/18 and a quadrivalent targeting high-risk HPV-16/18 and low-risk HPV-6/11. Based on data in their respective trials, the bivalent vaccine is likely to have higher efficacy against non-vaccine oncogenic HPV-types (cross protection). The quadrivalent has an additional effect against genital warts. The differences in the annual impact of both vaccines on precancerous lesions, genital warts (GW) and cervical cancer (CC) were evaluated. **METHODS:** A static prevalence-based model was developed, which estimates the differences in lesions, GW, CC, and costs prevented between the two vaccines over a one-year period at steady state (i.e., when all women are vaccinated). The base case analysis was performed from a health-care payer's perspective, including only National Health Insurance covered costs. In addition, an analysis from a societal perspective was performed, including also indirect costs and out-of-pocket payments. Epidemiological and cost data were obtained from published sources. Efficacy figures were based on the latest results from each vaccine's respective clinical trial. Univariate sensitivity analyses were conducted, in which parameters were varied 20% up and down from the baseline value. **RESULTS:** Under this model, the bivalent vaccine would result in an additional reduction of 1486 ASCUS; 1768 CIN1; 1230 CIN2/3 and 166 CC cases per year, while the quadrivalent vaccine would result in an additional 7726 GW cases prevented per year. The additional annual costs averted with the bivalent vaccine was estimated at US\$ 1.3 million and US\$ 1.9 million from a health-care payer's and societal perspective, respectively. This outcome is most sensitive to cross protection figures. **CONCLUSIONS:** Vaccination with the bivalent vaccine is expected to have a higher impact than the quadrivalent vaccine on the prevention of precancerous lesions and CC in Taiwan, and would lead to more cost averted.

**PCN15****COST ANALYSIS BETWEEN TYROSINE KINASE INHIBITOR VERSUS DOCETAXEL IN ADVANCED NON-SMALL CELL LUNG CANCER**

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**OBJECTIVES:** To determine the cost-effectiveness of the second line treatment of advanced non-small cell lung cancer (aNSCLC) with epidermal growth factor receptor tyrosine kinase inhibitor (EGFR-TKI) comparing to docetaxel under health-care provider perspective. Only direct medical cost was considered. Outcomes included the patients' survivals. **METHODS:** We collected data of aNSCLC patients treated at the Medical Oncology Unit during the year 2009 in a prospective manner. Patients were followed until death. Direct medical costs included medicine cost, laboratory cost,